

PICTURECORRECT

Shutter Speed and Aperture

Understanding the relationship between aperture and shutter speed will help you take full advantage of your DSLR allowing you to have more fun capturing photos. The aperture is the size of the whole in the diaphragm of the lens. It is possible to view this device when you look right square into the lens of the camera. The aperture diameter (size of the whole) is denoted by a sequence of f/numbers. Also on the DSLR's digital screen will display the aperture size as well. The smaller the f/number, the larger the aperture (whole) and consequently the larger the f/number the smaller the aperture. Every time you widen up one step (f/5.6 to f/2.8), you allow in twice the amount of light. Reduce one step and you let in half the amount of light. For illustrations of the actual aperture in the lens and its relationship to the f/stop numbers, go to my site, the link is at the bottom.



"Time stays still...sometimes" captured by MarAndra (Click Image to See More From MarAndra)

O.K. so we know that aperture is the size of the opening in the lens that light enters, but how to apply it to capturing images? Photography is all about getting the correct quantity of light for a given picture. At f/22 which is a very small aperture, less light will be able to hit the image sensor compared to a picture taken at f/1.4 which is a very big opening. Keep in mind though that this is assuming the shutter is open for the same amount of time. But you can get the identical exposure at f/22 as you can get at f/1.4 by simply lowering the shutter speed which will cause the shutter to be open for more time allowing more light in. Aperture and shutter speed settings combined will allow a desired quantity of light to be exposed to the image sensor. Different combinations of f/stops and shutter speeds can achieve identical results in exposure. For example,

f/8 at a shutter speed of 1/30 which will open the shutter for 1/30th of a second will result in the same exposure as f/16 (smaller hole) at a shutter speed of 1/8 (open longer than 1/30). This is known as equivalent exposure.

Knowing that you can get the same exposure values using different combinations of f/stop and shutter speeds is one thing. Knowing when to use them is something else. Just because you will be able to get the same exposure does not mean that your image results will be the same. This is where the “art” of photography comes in. Do you want a sharp image or some blur? Do you want everything possible in focus or just the subject? Once you decide the answers to these questions you can choose your settings for aperture and shutter speed.

Shutter speed settings and the effects it will have on your image are not too hard to understand. The longer the shutter is open (slower shutter speed), any objects that are moving in the field of the image will appear more and more blurred. Remember though that the subject doesn't have to be the one moving to result in a blurred result. A slow shutter speed with a shaky hand can blur a picture as well. This is why a tripod is a good idea and sometimes mandatory for shots with slower shutter speeds. Aperture has an effect on something known as “Depth of Field”. The smaller the f/stop which widens the diameter in the lens, the less depth of field there is. Consequently the bigger the f/stop which shrinks the diameter of the whole in the lens, the more depth of field there is. The more depth of field, the sharper all objects in the field of view are. The less depth of field, only the subject in focus will be sharp.



"Oktoberfest 2008" captured by myvista (Click Image to See More From myvista)

Put it to Use

It is not difficult to start experimenting with aperture and shutter speed and start getting quality results. Even the least expensive DSLRs on the market today have the tools necessary to aid beginner photographers when it comes to taking pictures on settings other than “AUTO”. Decide what type of picture and effect you want. For the first example we will use a candid portrait of a person's face. The desire is to have the face fill the shot and to be the main focus point of the image. To obtain this result put your camera on Aperture Priority. This is a setting that gives you control over the aperture while the camera will take care of shutter speed on its own.

Now that you are in control of the aperture, go ahead and open it all the way, focus on the subjects face and take the shot. In taking this shot you have reduced the depth of field so that **ONLY** your subjects face is in focus blurring most everything else out.

I will use a landscape photo for the next example. Landscape photos require maximum depth of field. Put your camera on aperture priority like the example above. But this time close or narrow the aperture all the way. Now that the aperture is very tiny, the camera will compensate on it's own by forcing the shutter to stay open longer so it gets the right exposure. The result of this can lead to a blurred image so a tripod is recommended.

For a final example I will use a sporting event. This time utilize the “Shutter Priority” setting on your camera. Shutter priority will allow you to set the shutter speed on your own while the camera will compensate for exposure with setting it's own aperture. A cool technique to try is to slow the shutter speed down and take shots of the subjects running jumping etc.. The trick is to follow the subject with the camera while taking the shot with a slow shutter speed. If you are smooth about it, you will get a result that shows the subject mostly in focus but everything in the background blurred with motion. This will give the sensation of movement and speed in the photo. These are not the easiest to achieve desired results so take a lot of pictures.



Photo captured by DJK (Click Image to See More From DJK)

What you want to do is try out these different techniques as often as you can. Get use to taking shots on settings other than Full Auto. Only once you get comfortable with the different camera settings and the relationship between aperture and shutter speed, will you then start to unlock the full potential of your DSLR camera.

Happy shooting!

About the Author

I practice photography as a hobby. I love to learn and write what I learn. I hope this helps anyone out there with a new DSLR camera. Learn more at [Aperture/Shutterspeed](#)

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